Challenge TB–Botswana

Year 2
Quarterly Monitoring Report
April – June 2016

Submission date: July 29, 2016

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Cover photo:
Visit to NTRL Botswana by USAID Health Director, Challenge TB Botswana activity manger and other ministry of health officials, May 2016 (c*redit: Dr Anyo, KNCV)*

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1. Quarterly Overview

Country	Botswana
Lead Partner	KNCV Tuberculosis Foundation (KNCV)
Other partners	-
Work-plan timeframe	October 2015 – September 2016
Reporting period	April – June 2016

Most significant achievements:

1. National Rollout of GxAlert

The national rollout of GxAlert gained momentum during this reporting period. As kick off a one-day national level training was conducted to ensure that local staff had adequate knowledge on GxAlert technology, installation, systems administration, use and application. The training was facilitated by consultants from Global Connectivity. 17 participants (7F/10M) from the Ministry of Health (MOH) (IT, M&E departments), National Tuberculosis Program (NTP), National Tuberculosis Reference Laboratory (NTRL), and other departments attended the training. The training was effectively conducted and completed evidenced by the fact that the knowledge transferred during the training was translated in the installation and functioning of the server. Following the training, the local team (MoH-led) completed the installations of GxAlert at 29 GeneXpert sites (29 out of total 34 sites) by the end of this quarter. Furthermore, the systems administrators were able to effectively log onto and navigate the basics of the site. The NTP and NTRL are working together as co-systems administrators for the GxAlert application. The installation team also used the opportunity to upgrade the GeneXpert to v4.7b Cepheid software.

On the second day following the national training, a half-day workshop was conducted with key stakeholders on Data Collection Plan and Exploration of an MOH Data Use Agreement. 25 participants (11F/14M) from different in-country stakeholders (NTP, NTRL, IT, M & E, KNCV, U.S. Center for Disease Control and Prevention (CDC) , World Health Organization (WHO), Botswana University of Pennsylvania Partnership (BUP)) participated in the workshop. The workshop was instrumental to set the key data elements that GxAlert will be collecting. Five key additional variables were agreed by the group for collection via GxAlert (patient category, age, HIV Status, specimen collection date and specimen type). These variables are in addition to the standard data set (patient ID, Cartridge usage and stock status, Diagnostic results, error rate and type, non-functionality of the instrument including module status) captured by the GeneXpert instrument. The workshop covered discussions around data access by defining a Data Use Agreement.

2. Integration of National TB & HIV surveys in Botswana

The next Botswana AIDS Impact survey (BAIS) is scheduled for 2017, a similar timeframe as the TB prevalence survey. The Botswana TB program and the National AIDS Coordinating Agency (NACA) have agreed to explore integration of the national TB prevalence survey with the BAIS. A one-day round table meeting on the proposed integration of TB & HIV/AIDS surveys in Botswana was held during this quarter. The meeting was facilitated by a KNCV consultant (Dr Eveline Klinkenberg). The objective of this meeting was to have a round table discussion with key stakeholders involved in both surveys and to make recommendations on a go/no-go of a combined TB & HIV/AIDS surveys. Key stakeholders (NACA, Statistics Botswana, NTP, USAID, CDC, WHO, Global Fund, BUP, KNCV) participated in the meeting. After exploring the opportunities and challenges of combining the two surveys, the stakeholders were in favor of combining and agreed to make the recommendations to the higher officials at MoH for a final decision. After the decision by the Ministry of Health, CTB will continue to provide TA in finalizing the combined protocol for TB and HIV survey and its implementation.

3. Training of Health Care Workers on TB/HIV case management and the updated GeneXpert algorithm

A 5-day training of health care workers (HCW) (13th – 17th June 2016) was conducted in Letlhakane (Boteti district). 25 HCWs (15F/10M) were trained on TB/HIV case management and the updated GeneXpert algorithm. GeneXpert MTB/RIF test has been adopted as 'initial TB diagnostic test' for all presumptive TB cases since the beginning of 2016 and the algorithm was updated during this quarter. Hence to advance the implementation of this recommendation, proper orientation of HCWs on the updated algorithm is necessary. The revised algorithm has been incorporated into the standard MoH's TB/HIV case management training course.

4. NTRL renovation

The NTRL, the only culture and drug susceptibly testing (c/DST) laboratory in the country, has been facing challenges with the provision of culture and drug susceptibility testing. The TB containment facility has not been functional for almost two years causing problems in the provision of c/DST services. With technical support from Challenge TB (CTB), the MoH has contracted the services from Air Filter Maintenance Services (AFMS), a South Africa based company to install the new ventilation system. AFMS was previously contracted by the NTRL and CDC Research Laboratory to service the biosafety cabinets of the NTRL and the ventilation system of the CDC Research Laboratory. In addition to the continued technical assistance, CTB has also made financial contribution (through a contract between KNCV and AFMS) to this refurbishment of the NTRL containment facility. During this quarter, the AFMS engineers have been at the lab making the necessary repairs. The work is progressing well and expected to be finalized by the end of July 2016.

Technical/administrative challenges and actions to overcome them

The NTRL containment facility has not been functional for almost two years causing problems in the provision of c/DST services. Since there are currently no possibilities to confirm MDR-TB diagnosis and no possibilities to diagnose pre-XDR and XDR-TB patients, clinicians have been forced to make decisions that were not based on DST testing. This has greatly compromised the quality of patient care in the country.

A key challenge in the GxAlert roll-out process was that MoH only mandated the use of Government Data Network (GDN) instead of secure routers. This required switching the routers with wi-fi hubs and various other equipment structures, to interface with the GDN as per MoH's mandate.

2. Year 2 activity progress

Sub-objective 2. Comprehensive, high quality diagnostics2. Comprehensive, high quality diagnostics2. Comprehensive, high quality diagnostics								
Planned Key Activities for the Current Year	Activity #	Planned Milestones				Milestone status	Milestone met? (Met, partially, not met)	Remarks *(reason for not meeting milestone, actions to address challenges, etc.)*
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Year end	Oct 2015-June 2016		
A) Perform an internal audit of the current C/DST and M/DST with recommendations for improvements to provide quality and efficiency in testing	A2.3.1	Report Audit results and provide recommendations	-	-	Annual Report on NTRL lab cDST/mDST performance with quality indicators with status of 3 proposed sites for cDST implementation	No audit results until the end of this quarter as NTRL is not functional yet. Meanwhile, the NTRL has currently limited slots in the CDC Research Laboratory (Gaborone) to carry out some urgent routine work (approx. 20 samples per week) and proficiency test of samples panels were received at the NTRL September 1, 2015 and analysis completed on November 30, 2015.	Not met	The NTRL containment facility has not been functional for close to two years causing problems in the provision of (c/DST) services. In addition to guidance of CTB Senior lab advisor based at NTRL, CTB has made financial contribution to the refurbishment of the NTRL. The renovation process is progressing well and that the refurbishment of the lab is expected to be completed by the end of July 2016.
B) Support the lab through the current 2nd-line validation process	A2.3.1	Progress report on validation	-			Reported results: Fist Line phenotypic testing. Drugs Tested for phenotypic DST (MGIT) = 100% concordance Second line Phenotypic testing. Drugs included: KN, AM, CM, OFL and PZ on MGIT 960 = 100% concordance MDR TB plus LPA = 100% concordance	Met	The 2nd-line validation process is already completed

C) Work to link the lab with the WHO SRL network for International proficienty testing	A2.3.1	Progress Report on linkage with SRL Antwerp	-	Progress Report on Proficiency Testing		A MoU has been established with SRL Uganda on the 20th February 2015. The first ever visit from the SNRL Uganda to NTRL Botswana was conducted during the 2nd quarter (22nd February to 4th March 2016). This visit was combined with the visit of the East, South and Central African (ECSA) health committee to NTRL and NTP. A second visit by the SNRL took place in May 2016 to work with the quality monitoring unit of NTRL	Not met	The current SRL is in Uganda based on WHO AFRO recommendations for labs to use regional SRL for regional supervision. The progress report on proficiency testing (PT) will be produced when the testing is complete. NTRL was non-functional and get rare opportunities to work in the CDC container lab. New panels for PT have been discussed to be sent as from September 2016 when refurbishment is completed.
D) Assess the feasibility of implementation of culture and DST testing at the 3 identified sites (Nyangabgwe, Letsholathebe and Ghanzi)	A2.3.1	Perform site visit to 1st (Nyangabgwe) of the proposed labs for c/DST implementation. Report on assessment and feasibility for c/DST		NA		The visit to this site by the senior lab adviser and External Quality Assurance officer from NTRL was done. It also included supportive supervision to 3 microscopy and GeneXpert sites. Discussions also included preparations for the establishment of culture and DST services for the site. This venture is funded by the GF and procurement and other works will continue: foundation work, tendering for procurement of containerized TB lab	Partially met	The only additional site for C/DST envisaged for Botswana in the near future is the planned containerized lab for Francistown which will be implemented under Global Fund. 1st site (Nyangabgwe) was visited; 2nd (Letsholathebe) & 3rd sites (Ghanzi) are not relevant since the focus of MOH has shifted to strengthening the GeneXpert sites instead of investing in the specialized culture and DST labs.

						(CTL) etc. Currently the single culture and DST facility in the country is located in Gaborone and mainly serves the Southern part of the country while covering for the north as well. The Nyangagbwe site in Francistown is the only feasible site for additional culture and DST services.		
A) GeneXpert program assessment	A2.4.1	Completed assessment and Report 2014 GeneXpert Data	-			Initial data template developed by the in-country senior Lab Technical Adviser has been used to collect data for assessment on all 34 GeneXpert sites. GeneXpert Network assessment for GxAlert implementation has been completed. During this 3rd quarter, data collection is completed for all GeneXpert sites and data has been compiled for 2015 as indicated in the annex table below.	Met	Data collection for GeneXpert program assessment has been completed and has helped the GxAlert roll-out. Data collection is completed during the 3rd quarter and data is available for most (29) GeneXpert sites (see the table below on page 13). However more comprehensive assessment of the GeneXpert implementation is planned to be conducted during the 4th quarter of APA2 or 1st quarter of APA3
B) Technical advisory role to support National GeneXpert program activities on re-training,	A2.4.1	Progress Report training, mentoring , utilization and	Progress Report training, mentoring , utilization and	Progress Report training, mentorin g, utilizatio n and	Annual Summary of the National GeneXper t program performa	Mentoring and supportive supervision to 3 GeneXpert and TB microscopy sites in Greater Francistown and Tutume districts has been conducted	Partially met	All three GeneXpert sites visited have functional machines although with limited performance related to either modular failure, dust clogged filters or high temperature.

mentoring, M&E, and quality processes.		quality performance of the National GeneXpert program	quality performance of the National GeneXpert program	quality performance of the National Xpert program	nce utilization and impact.	during the second quarter covering three health facilities. Xpert MTB/Rif algorithm has been updated to roll-out the use of Xpert to all presumptive TB cases. National ToT on Xpert has been completed. The updating of the algorithm was completed during the third quarter. No site visits were conducted during this quarter.		Assistance from CTB will continue to ensure the implementation of the revised Xpert MTB/Rif algorithm in rolling out its use to all presumptive TB cases. First results based on this new algorithm will be reported in the next quarter (Q4)
C) GxAlert Preparation, implementation, evaluation	A2.4.1	Assessment for GxAlert roll-out with proposal Delivered Start installation of GxAlert (10/34 sites)	Continue installation (25/34 sites)	Final Install (34/34 sites) with Final Report from STTA.	External review by consultant of GxAlert roll-out with final report/ recommendations	National training of local staff on GxAlert rollout and data collection & data use policies has been conducted during this quarter. .	Partially met	The next visit of Global Connectivity consultants is planned 2 months post the national training and initial implementation which is scheduled for August 2016. The consultants will return to the country to help analyze data trends, set up notifications and reports, and enhance MOH ability to get maximum value from this data. The remaining sites have issues with government data network system which need to be resolved before installation of the GxAlert (to be done in the 4th quarter of APA2.

A) Assessment of current specimen referral system and identify baseline activities for all 34 GeneXpert sites	A2.6.1	Design assessment checklist and collect annual baseline data for all 34 GeneXpert sites Complete assessment on 34 sites and report			Annual Report on specimen transport Systems and overall impact of mitigated solutions	Until the end of this quarter, only 15 out of the 42 active lab sites have sent information on specimen referral. The NTRL is the training unit for all 34 GeneXpert sites and the CDC GeneXpert machine is used for research purposes mostly.	Partially met	Mapping completed during 3rd quarter and implementation in selected district will commence during the 4th quarter
B) Identify alternative strategies with cost / sustainability evaluation	A2.6.1	Provide Recommendations from assessment on mitigated solutions per site (34)(if necessary)		Establishing system for sample transportation in one Xpert sites		During the recent visit of Max Meis, KNCV HQ Technical Focal Point, it was agreed to start this activity in Quarter 3 with one district and to add another district in Quarter 4. Focus will be on specimen transportation from peripheral sites to the GeneXpert sites (hubs). The in-country senior lab adviser has mapped specimen referral routes from peripheral health units to corresponding GeneXpert hubs based on the information collected from the sites.	Partially met	This activity is refocused as establishing system for sample transportation to all GeneXpert sites (hubs), including turn-around-time monitoring system. Implementation in few sites will commence during the 4th quarter. Priority will be given to PEPFAR supported districts.
C) Implementation by District	A2.6.1		Progress Report on implementation process	Interim Report on implementation		This activity has not yet started. During this quarter, mapping of specimen referral from	Not met	Mapping completed during 3rd quarter and implementation in selected district will commence

			of mitigated solutions	process of mitigated solutions (per site/district)		peripheral health units to corresponding GeneXpert hubs has been developed.		during the 4th quarter.
D) M&E	A2.6.1		Devise M&E Tool to monitor ST Systems	Use M&E tool per 34 GeneXpert sites for ST Systems		During this quarter, mapping of specimen referral from peripheral health units to corresponding GeneXpert hubs has been developed.	Not met	Mapping completed. Implementation in selected district is rescheduled for 4th quarter.

National TB Reference Laboratory Refurbishment

GeneXpert implementation data for 2015 (A2.4.1)

SN	Facility Name	MTB-	MTB+	Rif resist	Rif indet	Invalid	Error	No result	App. No. of cartridges consumed	Expired cart	Stock-out
1	Rakops	23	9	3	0	0	1	4	40		
2	Kasane	254	44			1	38	35	372		
3	Police	170	30	3	0	0	25	0	228		
4	Bock 9	264	114	17	1	1	10	2	409		
5	Phikwe	335	55	1	0	6	27	1	425		
6	Bobonong	128	41	8	1	0	17	0	195		
7	Masunga	161	21	2	1	1	9	0	195	10	
8	Tonota	186	35	1	0	0	31	9	262	5	
9	Mabutsane	98	18	3	0	0	7	13	139		
10	Letlhakane	127	45	13	0	3	12	0	200		
11	Palapye	131	25		0	0	7	3	166		
12	Mahalapye	483	92	24	3	8	9	8	627		
13	Hukuntsi	374	52	7	3	3	19	8	466		
14	Letlhakeng	156	31	0	0	0	2	2	191		1 month
15	Scottish	322	76	12	3	3	37	0	453		
16	Nyangabwe	140	70	6	2	1	16	1	236		
17	Gumare	337	48	10	1	1	6	0	403		
18	Thamaga	9	2	0	0	0	0	0	11		
19	KSDA	120	21	2	0	1	11	18	173		40 days
20	DRM	51	8	6	1	2	2	3	73		3 months
21	Sefhare	61	9	1	0	0	5	5	81		
22	PMH	1003	166	17	2	6	49	2	1245		
23	Good Hop	21	1	0	0	0	0	0	22		
24	Athlone	214	60	12	1	0	11	1	299		
25	Tsabong	197	41	5	2	1	13	7	266		5 months
26	Gantsi	776	146	12			41		975		
		6141	**1260**	**165**	**21**	**38**	**405**	**122**	**8152**		

Sub-objective 3. Patient-centered care and treatment								
Planned Key Activities for the Current Year	Activity #	Planned Milestones				Milestone status	Milestone met? (Met, partially, not met)	Remarks *(reason for not meeting milestone, actions to address challenges, etc.)*
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Year end	Oct 2015- June 2016		
A) Advisory capacity for routine training of MCH staff on clinical signs of TB, particularly failure to thrive, the current algorithm for screening children for TB, and recommendations for IPT	A3.1.1	Quarterly progress reports on training and improved activities in MCH clinics	Quarterly progress reports on training and improved activities in MCH clinics	Quarterly progress reports on training and improved activities in MCH clinics	Uptake/ Impact Report on screening for TB, Dx referrals from MCH clinics and IPT use in Children	The current WHO Pediatrics TB framework has been adapted in order to align the country's guideline with the WHO standards. The child health unit of MoH has actively participated in the adaptation process and discussed to establish platform for collaboration between TB and Child Health to work together and incorporate clinical signs of TB in children into the existing child health training package.	Partially met	Training of HCWs on the updated training package is planned for the 4th quarter of APA2. Though child health unit of MoH was very active during the initial adaptation process, availability of appropriate officer to liaise with has been a challenge and this has led for the training to be pushed to the last quarter.
A) Quarterly mentoring of NTP staff at the 5 MDR-TB treatment sites to include pharmacovigilance and and update of National guidelines for programmatic management of drug resistant TB (PMDT) in-line with new WHO recommendation	A3.2.1	Quarterly progress summary on MDRTB site visits (2nd site) to include relevant data on patients, treatment outcome, and Adverse event reporting	Quarterly progress summary on MDRTB site visits (3rd site) to include relevant data on patients, treatment outcome, and Adverse event reporting	Quarterly progress summary on MDRTB site visits (4th site) to include relevant data on patients, treatment outcome, and Adverse event reporting	Quarterly progress summary on MDRTB site visits (5th site) to include relevant data on patients, treatment outcome, and Adverse event reporting	Mentoring and supportive supervision conducted in 4 out of the 5 MDR-TB sites over the first 2 quarters: (Nyangagbwe Hospital, Sekgoma Memorial Hospital Letsholathebe II Memorial Hospital and Ghanzi Primary Hospital). Mentoring visit was not conducted during this quarter due to engagement of NTP	Met	The mentoring visit was conducted by MDR-TB trained local staff (Dr Kgwaadira and Dr Kuate) with the technical and financial support from CTB. During the site visit to MDR-TB facilities, the officers also extended the supportive supervision to other facilities in the districts which are referring patients to MDR-TB sites. The other PEPFAR partner (BUP) is also supporting the clinical mentoring of 2

s						staff in other pressing issues. CTB has supported the training of HCWs on TB/HIV case management and the revised GeneXpert algorithm during the 3rd quarter.		MDR-TB sites (Gaborone and Francistown MDR-TB sites)
B) Technical Support for implementation of National Strategy under Global Fund	B3.2.1	Quarterly progress report on TA to GF grant implementation	Quarterly progress report on TA to GF grant implementation	Quarterly progress report on TA to GF grant implementation	Quarterly progress report on TA to GF grant implementation	KNCV, through the CTB project, has been closely supporting the full cycle of Global Fund implementation from concept note development, development of implementation plan and grant making. CTB helped in the development of implementation plan and the first disbursement of Global Fund grant was made during the 3rd quarter.	Met	CTB has supported the development of implementation plan for the Global Fund grant. CTB will continue to actively participate in the Global Fund Technical Working Group (TWG) to closely monitor and support the implementation of the grant.
C) Technical support for the harmonization of community based program tools for ACF	C3.2.1	Quarterly progress report on TA to community based activities	Quarterly progress report on TA to community based	Quarterly progress report on TA to community based	Quarterly progress report on TA to community based	During the 3rd quarter, the MoH has established a national task force to harmonize and update the existing different community based TB & HIV guidelines and tools. KNCV in-country adviser was invited as the member of taskforce and participated in the first meeting towards the harmonization and updating process.	Partially met	This activity was planned under TB/HIV Global Fund grant and has been started during the 3rd quarter following the first disbursement.

Sub-objective 4. Targeted screening for active TB4. Targeted screening for active TB4. Targeted screening for active TB								
Planned Key Activities for the Current Year	Activity #	Planned Milestones				Milestone status	Milestone met? (Met, partially, not met)	Remarks *(reason for not meeting milestone, actions to address challenges, etc.)*
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Year end	Oct 2015- June 2016		
A) Advisory Role for the implementation of Contact Investigation (CI) approaches using the Community Health Workers (CHWs)	A4.1.1	Quarterly progress report on CI program using CHWs	Quarterly progress report on CI program using CHWs	Quarterly progress report on CI program using CHWs	Annual Report on impact of CI via CHW network	Contact investigation based on the revised WHO guideline and implementation manual is being piloted in one of the high burden TB districts (Ghanzi district). CTB has been providing technical support to NTP to develop tools that are necessary in the implementation of contact investigation (namely index case interview and chart review form, and TB contact investigation form). The implementation of the pilot project has been completed during the 3rd quarter	Partially met	The pilot implementation was completed during the 3rd quarter and the report is expected to be available during the 4th quarter. The findings from the pilot will help the country to develop a national guideline including standard operating procedures (SoP) for the nationwide implementation of the revised contact investigation. The implementation is planned to start during APA3. This activity is funded by the Global Fund under Year 2 (which corresponds with APA3 of CTB)

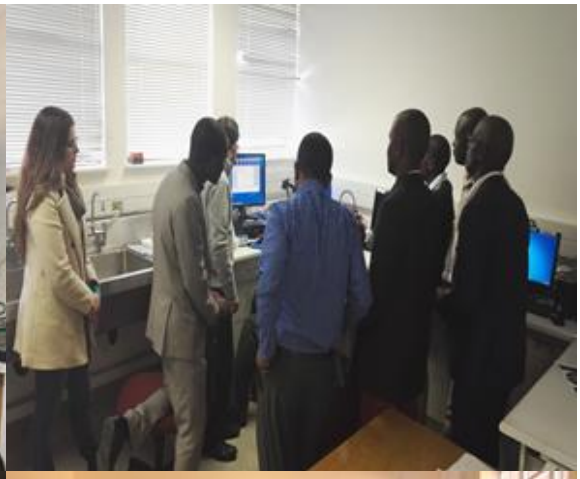
Sub-objective 7. Political commitment and leadership								
Planned Key Activities for the Current Year	Activity #	Planned Milestones				Milestone status	Milestone met? (Met, partially, not met)	Remarks *(reason for not meeting milestone, actions to address challenges, etc.)*
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Year end	Oct 2015- June 2016		
A) World TB Day Commemoration	A7.1.1		Disseminate key messages and brand CTB			CTB supported the commemoration of World TB Day (March 2016) which was hosted in Palapye district and officiated by the US Ambassador, H.E. Earl R. Miller, Minister of Health, Hon. Dorcus Makgato and high level government officials. Many government, private, partner and civil society organizations attended the event. The CTB team provided support during the preparations and smooth running of the day. Max Meis, KNCV HQ Technical Focal Point for Botswana, also attended and was a recognized VIP at the ceremony. There was an active presence of the USAID Mission. CTB disseminated key messages and the brand CTB using promotional materials including the 120 Golf T-shirts for executives attending World TB Day 2016.	Met	

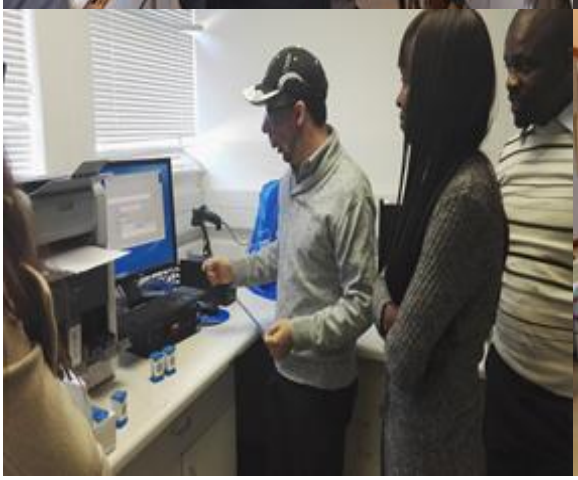
Sub-objective 8. Comprehensive partnerships and informed community involvement								
Planned Key Activities for the Current Year	Activity #	Planned Milestones				Milestone status	Milestone met? (Met, partially, not met)	Remarks *(reason for not meeting milestone, actions to address challenges, etc.)*
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Year end	Oct 2015- June 2016		
A) STTA support for grant negotiations	A8.2.1	Mission report will be available				This activity is not carried out as the MoH decided to prepare the grant making process with in-country support and the STTA mission did not happen. However, the in-Country CTB team has supported the grant negotiation process. CTB has also participated in GF TWG meeting and supported the development of implementation plan during the 3rd quarter.	NA	Initially the MoH preferred to get STTA for the development of implementation plan, which was planned for the 2nd week of April. But because of the very short notice, this is not possible to avail a consultant in such extremely short time. The in-country CTB team will continue to actively participate in the Global Fund TWG hence no STTA is needed and the budget line has been reprogrammed accordingly to support other priority activities identified in consultation with NTP.

Sub-objective 9. Drug and commodity management systems								
Planned Key Activities for the Current Year	Activity #	Planned Milestones				Milestone status	Milestone met? (Met, partially, not met)	Remarks *(reason for not meeting milestone, actions to address challenges, etc.)*
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Year end	Oct 2015- June 2016		
BDQ and Pharmacovigilance	9.2.1		STTA Mission Report on BDQ Registration and PV Training			Dr Gunta Dravniece, Senior KNCV Consultant provided TA for this activity during the 2nd quarter. Analysis of MDR-TB situation and readiness of NTP for implementation of new drugs and short MDR-TB treatment regimens was conducted. The consultant also facilitated one-day national workshop on identification of priority actions for introduction of short regimens for the treatment of drug-resistant tuberculosis (M/XDR-TB) and new drugs for M/XDR-TB treatment; she visited the NTRL, two potential clinical pilot sites, central medical store and conducted a meeting with the National drug regulatory and pharmacovigilance experts. NTP, NTRL, Drug Regulatory Unit (DRU), NASCOT and BEDAP participated in a work- shop and have been nominated to be part of the national Technical Working Group for Pharmacovigilance (PV), active drug safety monitoring and management (aDSM).	Met	The most important recommendation of the KNCV consultant was the prerequisite to have a functional NTRL in terms of its capacity to provide adequate c/DST services for the introduction of new drugs and shorter MDR-TB regimens. The renovation process is progressing well as highlighted above. The development of generic guide and implementation plan is planned for the 4th quarter (last week of August). MoT has been submitted to the USAID for approval to support the mission.

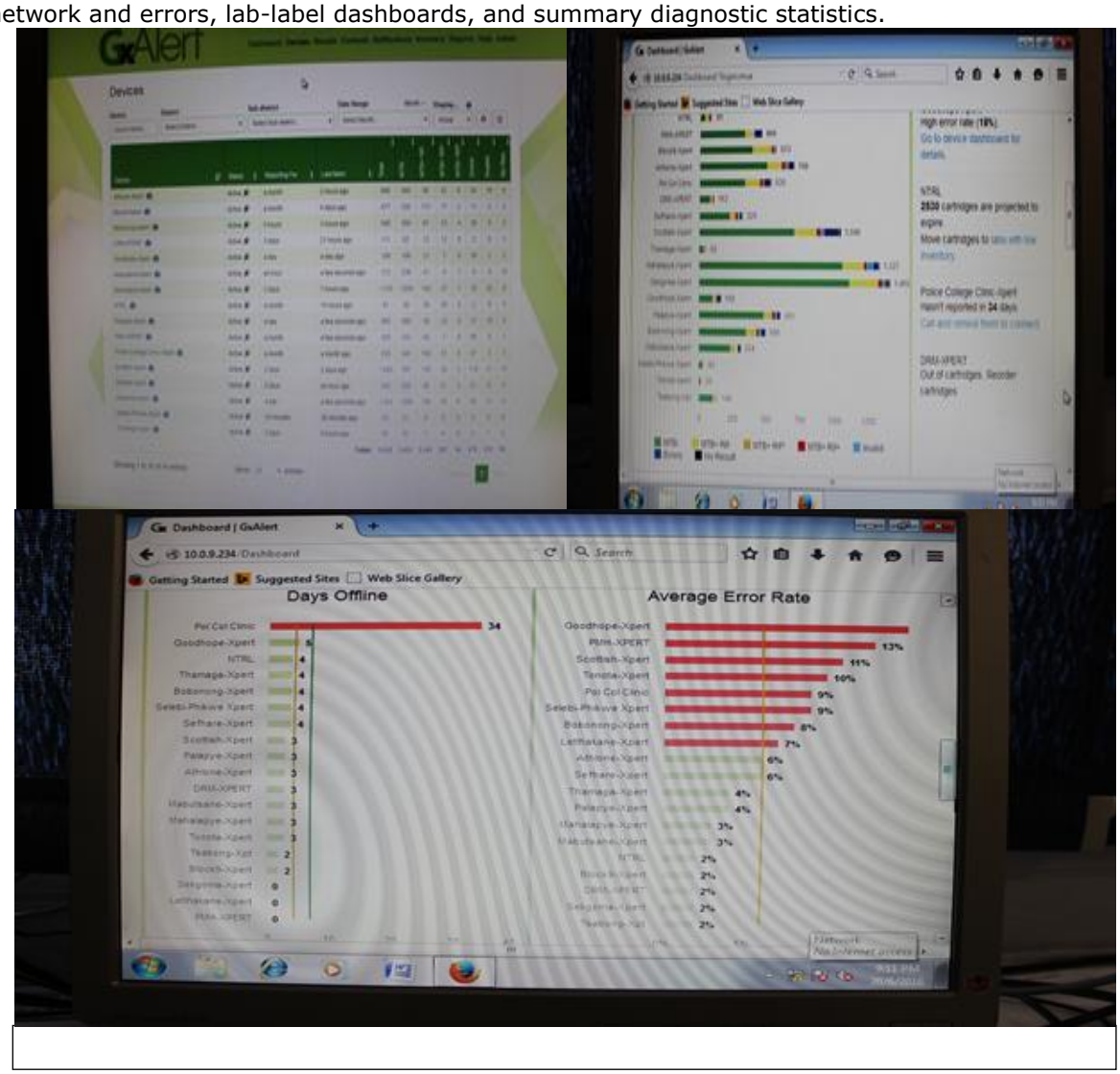
Sub-objective 10. Quality data, surveillance and M&E								
Planned Key Activities for the Current Year	Activity #	Planned Milestones				Milestone status	Milestone met? (Met, partially, not met)	Remarks *(reason for not meeting milestone, actions to address challenges, etc.)*
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Year end	Oct 2015- June 2016		
Assessment on connectivity and data systems with proposal for linking systems	A10.1.1	Assessment report with Proposed activities and cost for interfacing systems. With timeline and strategic plan				The landscape analysis was conducted during the 1st quarter. Following national training, GxAlert rollout has been completed at 29 GeneXpert sites (out of 34 GeneXpert sites) during the 3rd quarter. Roll-out to remaining 5 GeneXpert sites will be completed during the 4th quarter. The roll-out so far is quite successful. Patient data is already moving and actionable and useful.	Met	The Global Connectivity consultants will return to the country during the 4th quarter (August) to help analyze data trends, set up notifications and reports, and enhance MOH ability to get maximum value from this data.
Update the national survey protocol in-line with the current WHO guidelines and field experiences in implementing TB prevalence survey in other countries. Development of survey tools and training of staff in preparation for the TB prevalence survey implementation. Monitor and supportive supervision during the implementation of the survey.	A10.2.1	Updated survey protocol				Technical assistance to MoH to revise the 2011 protocol was provided by Dr Eveline Klinkenberg (KNCV consultant) during the 2nd quarter. Stakeholders' consultation workshop was organized to review and update the existing TB prevalence survey protocol. A high level round table meeting of stakeholders on integration TB & HIV surveys in Botswana was conducted during the 3rd quarter. Key stakeholders (NACA, Statistics Botswana, NTP, USAID, CDC, WHO, GF, BUP, C TB/KNCV) participated in the meeting. Dr Eveline facilitated the meeting.	Met	The objective was to have a round table discussion with key stakeholders involved in taking the decision for a go/no go of a combined TB prevalence survey and Botswana AIDS Impact Survey (BAIS). After exploring the opportunities and challenges of combining the two surveys, the team was in favor combining and agreed to make the recommendations to the higher officials at MoH for final decision, expected by end of July 2016. Document preparation for tendering process to initiate procurement has started. Dr Eveline will return to Botswana in the 4th quarter (August) to help to finalize the combined protocol for HIV

								and TB surveys.





GxAlert installations are working and rollout has progressed. Data is already moving, actionable, and useful. Below is the screenshot after the installation of GxAlert showing results from XpertMTB/RIF test, network and errors, lab-label dashboards, and summary diagnostic statistics.



3. Challenge TB's support to Global Fund implementation in Y2

Current Global Fund TB Grants

Name of grant & principal recipient *(i.e., TB NFM - MoH)*	Average Rating*	Current Rating	Total Approved/Signed Amount	Total committed Amount	Total disbursed to date
TB/HIV NFM – NACA/MoH & ACHAP	NA	NA	* USD27,000,000	USD 27,000,000	USD 4,600,000
TB-Grant – MoH	B1	B2	**USD 8,952,178	USD 8,522,651	USD 8,522,651

** TB/HIV NFM has been approved and the grant has been signed on the 1st February 2016.*
*** TB Grant covered period: 2007 – 2013*

In-country Global Fund status - key updates, current conditions, challenges and bottlenecks

CTB has been closely supporting the full cycle of Global Fund grant making from concept note development, country dialogue, addressing technical review panel comments, grant negotiation, development of implementation plan and preparation for grant signing. Botswana has been granted USD 27,043,807 for a joint TB/HIV concept note and signed the grant on the 1st of February 2016. NACA is the principal recipient and the MOH is the sub-recipient.

The country has received the first round disbursement of the Global Fund grant during the 3rd quarter. The in-country CTB advisers have held several discussions with the Global Fund coordinator to facilitate the implementation of Global Fund activities to be implemented under the first disbursement which includes training of health care workers on TB/HIV and childhood TB management, mentoring and supportive supervision to districts, organising national TB/HIV review meetings, recruitment of staff for the GF project management Unit CTB also supported with the development of the Global Fund procurement list to ensure procurement arrangements are finalised and fulfil the Global Fund requirements. CTB will continue to closely work with the Global Fund coordinator and support the MOH with regards to full implementation cycle of the grant, following and contributing (primarily through technical assistance) to its timely implementation and ensuring implementation with maximum impact.

Challenge TB & Global Fund collaboration this quarter – Describe Challenge TB involvement in GF support/implementation

CTB has been actively participating in Global Fund TWG meetings and discussions. CTB maintains an active role in Global fund related meetings and discussions held between the principal recipient and NTP which are scheduled on a monthly basis. CTB's role is mainly technical assistance on the implementation of the grant. CTB is not part of Country Coordinating Mechanism (CCM) or oversight committee's meetings.

4. Success Stories – Planning and Development

Planned success story title:	Implementation of Data Connectivity for Patient Management Through Integrated Technologies: National implementation and roll-out of GxAlert in Botswana
Sub-objective of story:	2. Comprehensive, high quality diagnostics
Intervention area of story:	2.4. Access, operation and utilization of rapid diagnostics (i.e. Xpert) ensured for priority populations
Brief description of story idea:	GeneXpert MTB/RIF has been rolled out to 34 health facilities in Botswana (there are 28 health districts and each district has at least one GeneXpert machine). It was rolled out with strong political commitement and was very successsful and can potentially make significant contribution to improving the diagnosis and care of TB patients in the country. However, there is a huge challenge in issues related to M&E. No data capturing mechanism is established and the manual collection of data does not work well. It takes weeks and months to reach the national level, incomplete and inaccurate reporting with lots of uncertaininities. In order to improve this situation, CTB - in collaboration with NTP – has introduced a remote monitoring system (GxAlert). Through the implementation of GxAlert the onsite GeneXpert test result could be available in 5 – 15 seconds after testing, data can replicate and move, patients can be put on treatment faster, and fewer stock outs and cartridge expiry are expected.

Status update: The landscape analysis was conducted during the first quarter of APA2. A consultant from Global Connectivity (Jeff Takle) visited the country to meet with major stakeholders and made a proper evaluation of the TB information system policy, software readiness, and infrastructure in place. The landscape is quite favorable to a national GxAlert implementation. A clear national TB strategy underpins these systems and provides clarity for where GxAlert can add value along the patient continuum of care.

During the 3rd quarter of APA2 the Global Connectivity consultants were in country and conducted several training sessions to ensure the local staff had adequate knowledge for GxAlert server installation, site installation, systems administration, data collection and data use policies. Global Connectivity trained 17 individuals from MOH (IT, M&E), NTP, NTRL, and MEMS on GxAlert installation, systems administration, and use of the application. A national workshop was conducted during the 3rd quarter with key stakeholders on Data Collection Plan and Exploration of an MOH Data Use Agreement. This workshop helped to set the standard data elements that GxAlert will collect. Five key variables were agreed by the group for collection via GxAlert (patient category, age, HIV Status, specimen collection date and specimen type). These variables are in addition to the standard data set captured by the GeneXpert instrument.

The NTRL and NTP each have one Systems Administrator account from which they can create new user accounts, set up notifications, and facilitate reporting via GxAlert.

By the end of the 3 quarter, the in-country MOH-led team has completed the installations of GxAlert to 29 GeneXpert sites (out of 34 sites). Data is already moving and is actionable and useful. The in-country team will complete the national rollouts to remaining 5 GeneXpert sites during the next quarter. The Global Connectivity consultants will return to the country during the 4th quarter to help analyze data trends, set up notifications and reports, and enhance MOH ability to get maximum value from this data.

5. Quarterly reporting on key mandatory indicators

Table 5.1 MDR-TB cases detected and initiating second line treatment in country (national data)

Quarter	Number of RR-TB or MDR-TB cases detected (3.1.4)	Number of MDR-TB cases initiating second-line treatment (3.2.4)	Comments:
Total 2011	46	71	In 2012, the number of patients that started on treatment is higher than the number of MDR-TB detected because some patients are started on treatment as presumptive MDR-TB (empirically) without laboratory confirmation. All cases were not c/DST confirmed due to seizing operation by NTRL since October 2014. The NTRL is currently under renovation and expected to be finalized by the end of July 2016. *The MDR-TB module of OpenMRS (which is the electronic data management system for TB) is not functional since the beginning of 2016 and hence MDR-TB data is not available. NTP has contacted a consultant to fix it and expected to be fixed by the beginning of 4 quarter
Total 2012	52	67	
Total 2013	59	59	
Total 2014	85	85	
Total 2015	82	82	
Jan-Mar 2016	Data not available*	Data not available*	
Apr-Jun 2016	Data not available*	Data not available*	
Jul-Aug 2016			
To date in 2016			

Table 5.2 Number of pre-/XDR-TB cases started on bedaquiline (BDQ) or delamanid (DLM)(national data)

Quarter	Number of pre-/XDR-TB cases started on BDQ nationwide	Number of pre-/XDR-TB cases started on DLM nationwide	Comments:
Total 2014	2	0	Four patients have been started on Bedaquiline in the country so far (2014 & 2015). They were treated with Bedaquiline on compassionate use. Preparation is underway for formal introduction of Bedaquiline in the 4th quarter. KNCV consultant (Gunta) will be coming back to Botswana to help to develop generic guide and implementation plan.
Total 2015	2	0	
Jan-Mar 2016	0	0	
Apr-Jun 2016	0	0	
Jul-Aug 2016			
To date in 2016			

Table 5.3 Number and percent of cases notified by setting (i.e. private sector, prisons, etc.) and/or population (i.e. gender, children, miners, urban slums, etc.) and/or case finding approach (CI/ACF/ICF) (3.1.1)

		Reporting period					Comments
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Jul-Sept 2016	Cumulative Year 2	
Overall CTB geographic areas	TB cases (all forms) notified per CTB geographic area*(List each CTB area below - i.e. Province name)*						National – CTB is supporting at national level and no specific population as such as target. Data not yet available, NTP faces challenges to collect the data
	TB cases (all forms) notified for all CTB areas						
	All TB cases (all forms) notified nationwide (denominator)	Data not yet available	Data not yet available	Data not yet available			
	% of national cases notified in CTB geographic areas						
Intervention (setting/population/approach)							
Choose an item.	CTB geographic focus for this intervention						Not applicable. CTB is not currently supporting any of these interventions.
	TB cases (all forms) notified from this intervention						
	All TB cases notified in this CTB area (denominator)						
	% of cases notified from this intervention						
	CTB geographic focus for this intervention						Under APA3, CTB is planning to do mentoring and supportive supervision to selected districts
	TB cases (all forms) notified from this intervention						
	All TB cases notified in this CTB area (denominator)						
	% of cases notified from this intervention						
Choose an item.	CTB geographic focus for this intervention						
	TB cases (all forms) notified from this intervention						
	All TB cases notified in this CTB area (denominator)						
	% of cases notified from this intervention						

6. Challenge TB-supported international visits (technical and management-related trips)

#	Partner	Name of consultant	Planned quarter				Specific mission objectives	Status (cancelled, pending, completed)	Dates completed	Duration of visit (# of days)	Additional Remarks (Optional)
			Q 1	Q 2	Q 3	Q4					
1	KNCV	Jeff Takle	X				Conduct landscape analysis for GxAlert implementation with cost analysis and projected time required for national rollout	Complete	09/10/2015	5 days	Part of APA1 work-plan
2	KNCV	Kathleen England	X				Laboratory Supervision, mentoring and network review	Complete	31/10/2015	5 days	
3	KNCV	Dianne van Oosterhout	X				Managerial and administrative support in the implementation of Challenge TB Project	Complete	02/12/2015	2 days	
4	KNCV	Eveline Klinkenberg		X			Review the existing prevalence survey protocol (developed in 2011) and conduct a workshop with the anticipated steering committee for the survey to agree on needed adaptations for the protocol in order for it to reflect the latest developments in methods and organization of prevalence surveys	Complete	22/01/2016	5 days	
5	KNCV	Gunta Dravniece		X			To enable the phased introduction of new drugs for MDR and XDR-TB treatment in Botswana	Complete	18/02/2016	7 days	Gunta is expected to come back in August 2016 to support development of generic guide and implementation

											plan is planned. MoT has been submitted to the USAID for approval to support this mission.
6	KNCV	Max Meis		X			As country Technical Focal point, provide technical assistance to the country office and NTP in the implementation of CTB	Complete	25/03/2016	7 days	
7	KNCV	Jeff Takle + 2 staff from Global Connectivity			X		GxAlert Implementation: Training, Installation and QA	Complete	18/05/2016	10 days	Follow up mission is planned for the last quarter
8	KNCV	Eveline Klinkenberg			X		TB prevalence survey and BAIS integration	Complete	02/06/2016	4 days	She will come back to Botswana in August to finalize the combined TB and HIV survey protocol.
9	KNCV	Max Meis				X	CTB APA3 work plan development	Pending			The PFM (Stephanie) will be travelling to support APA3 plan development
10	KNCV	Mar Koetse			X		CTB financial support visit	Complete	01/06/2016	3 days	
11	KNCV	External consultant TBD					STTA support for GF grant implementation	Cancelled			Funds were reprogrammed to support the participation of Gladys & NTRL manager in the PMU laboratory workshop in The Hague
12	KNCV	Nico Kalisvaart					Technical support for GxAlert rollout (with focus on data management)	Cancelled			Consultant will provide distant support

13	KNCV	Gunta Dravniece				X	Facilitate a national workshop to develop protocol for introduction of new drugs and short regimen	Pending			a follow up mission is planned to develop a generic plan to implement ND&R
14	KNCV	Eveline Klinkenberg				X	BDQ and Pharmacovigilance	Pending			Planned for 4th Quarter
15	KNCV	Eveline Klinkenberg				X	Supporting the combining of TB prevalence survey & BAIS V	Pending			Planned for 4th Quarter
Total number of visits conducted (cumulative for fiscal year)								9			
Total number of visits planned in approved work plan								15			
Percent of planned international consultant visits conducted								60%			

7. Quarterly Indicator Reporting

Sub-objective:	**2.Comprehensive, high quality diagnostics**					
Performance indicator	**Disaggregated by**	**Frequency of collection**	**Baseline (timeframe)**	**End of year target**	**Results to date**	**Comments**
2.3.1. Percent of bacteriologically confirmed TB cases who are tested for drug resistance with a recorded result.	New/Retreatment	Every six months	Baseline data 2014 collected from NTRL in Q4-APA1. (This data is not available) 28% (896/3,176)- this baseline is set based on 2013 data as full data for 2014 is not yet available	45%	Data not available	No culture and DST has been carried out by NTRL in the last quarters and hence data on % of confirmed TB patients with DST is not available at the moment. The NTRL refurbishment is to be completed by end of July 2016 and the lab will open for culture and DST in early September 2016. The GxAlert rollout is going on and to be completed by end of August. Hence the most realistic timeline to get data from NTRL and GxAlert on bacteriologically confirmed TB cases is during the first quarter

Sub-objective:	2.Comprehensive, high quality diagnostics					
Performance indicator	**Disaggregated by**	**Frequency of collection**	**Baseline (timeframe)**	**End of year target**	**Results to date**	**Comments**
						of APA3.
I2.4.6. #/% of new TB and Rif-resistant cases diagnosed using GeneXpert	TB and RR-TB (as GXAlert rolls out we will add HIV, <15 age , and more)	Quarterly	Baseline data is available for 2015 from facilities who have reported (1,425 new TB & RR diagnosed using GeneXpert for 2015)	2500	Data not available	GeneXpert has been rolled out as initial diagnostic test for all presumptive TB cases and hence the number of MTB+ and RR detected is expected to raise
I2.6.5 #/% of TB cases detected through a specimen transport system	New/RT/HIV	Quarterly	Baseline still not available	Increase by 10% compared to baseline TBD	Data not available	Specimen transport system cannot be assessed as the NTRL is still non-functional. For the GeneXpert, specimen referral cannot be assessed at NTRL level. We expect that data related to GeneXpert will be available after rollout of GxAlert

Sub-objective:	3. Patient-centered care and treatment					
Performance indicator	**Disaggregated by**	**Frequency of collection**	**Baseline (timeframe)**	**End of year target**	**Results to date**	**Comments**
I3.1.4. # of MDR-TB cases diagnosed	New/RT	Quarterly	108	150	24 (16%)	This result is for Oct-Dec 2015. Data for January – June is not available because the MDR-TB module of the OpenMRS is down
I3.2.4. #/% of eligible patients with drug-resistant TB enrolled on second-line treatment (disaggregated by sex, age and urban/rural)	As stated	Quarterly	Baseline data 2014 collected from NTP in Q4-APA1	150 (100%)	24 (16%)	This result is for Oct-Dec 2015. NTRNT Data for January – June is not available because the MDR-TB module of the OpenMRS is down. CTB will try to get the data through the supportive supervision visits and calling the 5 MDR-TB treatment sites.

I3.2.7. Treatment success rate for MDR-TB patients on treatment	As stated	Annually	60%	70%	Measured annually	
I3.2.12. % of HIV-positive registered TB patients given or continued on anti-retroviral therapy during TB treatment	Gender	Quarterly	72%	80%	75% (2,882/3,843)	This is the annual data from the end of APA1. Data for Quarter 1, 2 and 3 of APA2 is still not available. It will be shared when available
I3.2.22. #/% of TB patients followed by community-based workers/volunteers during at least the intensive phase of treatment	Gender/ Urban/Rural	Quarterly	65%	70%	76% (4,780/6,290)	This is the annual data from the end of APA1. Data for Quarter 1, 2 and 3 of APA2 is still not available. It will be shared when available

Sub-objective:	4. Targeted screening for active TB					
Performance indicator	**Disaggregated by**	**Frequency of collection**	**Baseline (timeframe)**	**End of year target**	**Results to date**	**Comments**
I4.1.1. #/% of eligible index cases of TB for which contact investigations were undertaken	Gender, Urban, Rural	Quarterly	Baseline data 2014 collected from NTP in Q4-APA1(which is not yet available)	20% increase of baseline	Data not available	This activity, based on the revised WHO guideline and implementation manual, is being piloted in one of the high burden TB districts (Ghanzi district). CTB has been providing technical support to NTP to develop tools that are necessary in the implementation of contact investigation (namely index case interview and chart review form, and TB contact investigation form). The pilot implementation was completed during the 3rd quarter and the report is expected to be available during the 4th quarter. The findings from the pilot will help the country to develop a national guideline including standard operating procedures (SoP) for the nationwide implementation of the revised contact investigation.

Sub-objective:	8. Comprehensive partnerships and informed community involvement					
Performance indicator	**Disaggregated by**	**Frequency of collection**	**Baseline (timeframe)**	**End of year target**	**Results to date**	**Comments**
I8.2.2. Status of Global Fund implementation (0=no preconditions have been met; 1=national strategic plan developed/updated ; 2=concept note submitted; 3=concept note is funded)		Annually	2	3	Measured annually	The country has received the first disbursement during the 2nd quarter (PR1 –ACHAP) and during the 3rd quarter for other PR (NACA). NACA and ACHAP are the two PRs.

Sub-objective:	9. Drug and commodity management systems					
Performance indicator	**Disaggregated by**	**Frequency of collection**	**Baseline (timeframe)**	**End of year target**	**Results to date**	**Comments**
I9.2.1. # of new and ancillary drug regimens that have become available in country since the start of Challenge TB	Drug/ regimen	Annually		Current Regimens do not include BDQ	Measured annually	Only 4 patients in 2014 and 2015 were initiated on Bedaquiline on compassionate use. The first assessment for country's readiness to introduce the new drugs was conducted during the 2nd quarter of APA2. Development of generic guide and implementation plan is scheduled for the 4th quarter of APA2, following which the new drugs and short regimen will be introduced.

Sub-objective:	10. Quality data, surveillance and M&E					
Performance indicator	**Disaggregated by**	**Frequency of collection**	**Baseline (timeframe)**	**End of year target**	**Results to date**	**Comments**
I10.1.4. Status of electronic R&R (0=paper-based R&R; 1=e-reporting to nat. level, no patient/case-based or real time; 2= pt./case-based ERR system in select sites (TB or MDR); 3= pt./case-based, real-time ERR system at national & sub-national levels, TB & MDR)	Urban, Rural	Annually	1	2	Measured annually	The country has been using electronic TB Register (ETR) for drug susceptible TB from district to the national level. Open MRS (which is patient based) is used at the 5 MDR-TB treatment centres for MDR-TB data management. Recently the country has decided to use one unified system for both drug susceptible and drug resistance patients. Hence data has been migrated from ETR to OpenMRS. Now OpenMRS is the electronic R & R system being used for TB in the country
10.2.2. Prevalence survey conducted/completed in the last three years	Urban, Rural, Age	Annually	No	Preparations for survey started. Protocol updated	Measured annually	Discussion is ongoing to combine TB prevalence survey with the upcoming HIV survey (BAIS), both planned to be implemented in 2017